

PATENT COOPERATION TREATY

PCT

NOTIFICATION OF ELECTION

(PCT Rule 61.2)

From the INTERNATIONAL BUREAU

To:

Assistant Commissioner for Patents
United States Patent and Trademark
Office
Box PCT
Washington, D.C.20231
ÉTATS-UNIS D'AMÉRIQUE

in its capacity as elected Office

Date of mailing (day/month/year) 26 October 1999 (26.10.99)	
International application No. PCT/IB99/00469	Applicant's or agent's file reference CM1737/NJ
International filing date (day/month/year) 22 March 1999 (22.03.99)	Priority date (day/month/year) 31 March 1998 (31.03.98)
Applicant RENNIE, Paul, John	

1. The designated Office is hereby notified of its election made:

☒ in the demand filed with the International Preliminary Examining Authority on:

27 September 1999 (27.09.99)

☐ in a notice effecting later election filed with the International Bureau on:

2. The election ☒ was

☐ was not

made before the expiration of 19 months from the priority date or, where Rule 32 applies, within the time limit under Rule 32.2(b).

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland Facsimile No.: (41-22) 740.14.35	Authorized officer Lazar Joseph Panakal Telephone No.: (41-22) 338.83.38
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PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference CM1737/NJ	FOR FURTHER ACTION see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below.	
International application No. PCT/IB 99/ 00469	International filing date (day/month/year) 22/03/1999	(Earliest) Priority Date (day/month/year) 31/03/1998
Applicant THE PROCTER & GAMBLE COMPANY et al.		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 5 sheets.

☒ It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the report

a. With regard to the **language**, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ the international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

b. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international search was carried out on the basis of the sequence listing :

☐ contained in the international application in written form.

☐ filed together with the international application in computer readable form.

☐ furnished subsequently to this Authority in written form.

☐ furnished subsequently to this Authority in computer readable form.

☐ the statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

☐ the statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished

2. ☒ **Certain claims were found unsearchable** (See Box I).

3. ☐ **Unity of invention is lacking** (see Box II).

4. With regard to the **title**,

☒ the text is approved as submitted by the applicant.

☐ the text has been established by this Authority to read as follows:

5. With regard to the **abstract**,

☐ the text is approved as submitted by the applicant.

☒ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. The figure of the **drawings** to be published with the abstract is Figure No.

☒ as suggested by the applicant.

☐ because the applicant failed to suggest a figure.

☐ because this figure better characterizes the invention.

2

☐ None of the figures.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/IB 99/00469

Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☒ Claims Nos.: Claims: 7-10
because they relate to subject matter not required to be searched by this Authority, namely:
Rule 39.1(iv) PCT - Method for treatment of the human or animal body by therapy
2. ☐ Claims Nos.:
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/IB 99/00469

Box III TEXT OF THE ABSTRACT (Continuation of item 5 of the first sheet)

Line 1: insert "(4)" after "device"
Line 2: insert "(5)" after "nosepiece"

INTERNATIONAL SEARCH REPORT

International Application No

IB 99/00469

A. CLASSIFICATION OF SUBJECT MATTER
 IPC 6 A61M15/08 B05B5/00

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 6 A61M B05B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	GB 2 273 673 A (UNILEVER PLC) 29 June 1994 see the whole document ---	1
A	EP 0 501 725 A (ICI PLC) 2 September 1992 cited in the application see abstract ---	1
A	WO 96 40441 A (ICI PLC ; GREEN MICHAEL LESLIE (GB); NOAKES TIMOTHY JAMES (GB); PRE) 19 December 1996 cited in the application see abstract; figure 1 ---	1
A	US 1 599 111 A (EUDENE E. BEADLE) 7 September 1926 see the whole document ---	1
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☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

° Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search

3 June 1999

Date of mailing of the international search report

15/06/1999

Name and mailing address of the ISA

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 Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
 Fax: (+31-70) 340-3016

Authorized officer

Jameson, P

INTERNATIONAL SEARCH REPORT

International Application No

/IB 99/00469

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	FR 1 146 256 A (MME PAULAIS) 8 November 1957 see the whole document -----	1

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

IB 99/00469

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
GB 2273673	A	29-06-1994	NONE	
EP 0501725	A	02-09-1992	AU 658859 B	04-05-1995
			AU 1124692 A	03-09-1992
			AU 671054 B	08-08-1996
			AU 2053895 A	10-08-1995
			CA 2062064 A	02-09-1992
			JP 5104035 A	27-04-1993
			US 5490633 A	13-02-1996
			US 5292067 A	08-03-1994
			ZA 9202475 A	15-04-1993
WO 9640441	A	19-12-1996	AU 3525995 A	26-04-1996
			AU 5829496 A	30-12-1996
			BR 9509252 A	21-10-1997
			CA 2200181 A	11-04-1996
			CA 2222519 A	19-12-1996
			CN 1159773 A	17-09-1997
			CN 1192168 A	02-09-1998
			CZ 9701003 A	13-08-1997
			EP 0776253 A	04-06-1997
			EP 0837736 A	29-04-1998
			WO 9610459 A	11-04-1996
			HU 76948 A	28-01-1998
			JP 10506324 T	23-06-1998
			PL 319482 A	04-08-1997
			SK 42197 A	10-09-1997
			ZA 9604689 A	09-12-1996
US 1599111	A	07-09-1926	NONE	
FR 1146256	A	08-11-1957	NONE	



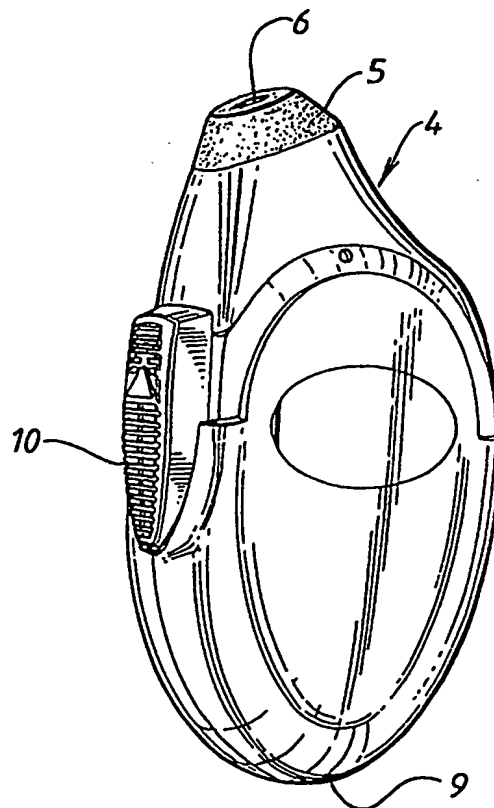
INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification ⁶ : A61M 15/08, B05B 5/00		A1	(11) International Publication Number: WO 99/49923
			(43) International Publication Date: 7 October 1999 (07.10.99)
(21) International Application Number: PCT/IB99/00469 (22) International Filing Date: 22 March 1999 (22.03.99) (30) Priority Data: 9806939.6 31 March 1998 (31.03.98) GB (71) Applicant (for all designated States except US): THE PROCTER & GAMBLE COMPANY [US/US]; One Procter & Gamble Plaza, Cincinnati, OH 45202 (US). (72) Inventor; and (75) Inventor/Applicant (for US only): RENNIE, Paul, John [GB/GB]; Ataraxia, Ballfield Road, Godalming, Surrey GU7 2HA (GB). (74) Agents: REED, T., David et al.; The Procter & Gamble Company, 5299 Spring Grove Avenue, Cincinnati, OH 45217-1087 (US).		(81) Designated States: AL, AM, AT, AT (Utility model), AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, CZ (Utility model), DE, DE (Utility model), DK, DK (Utility model), EE, EE (Utility model), ES, FI, FI (Utility model), GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SK (Utility model), SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG). Published With international search report.	

(54) Title: NASAL SPRAY DEVICE WITH IMPROVED SPRAY GEOMETRY

(57) Abstract

The invention relates to a packaged spray device (4), suitable for spraying into a bodily cavity, the device comprising a spray generator, a fluid reservoir and a nosepiece (5) having an exit surface, particularly to a device adapted to produce a spray comprising a fluid ligament with a spray cone diverging from one end of the ligament. Preferably the device is an electrostatic spray device wherein the spray cone comprises charged droplets. The invention further relates to a method of administering a fluid into the nasal cavity from a spray device without substantial penetration of the device into the nostrils. The device and method of the invention provide for gentle yet reliable delivery of a nasal treatment agent into the nasal cavity, especially into the nasal cavity of a human in need of nasal treatment such as decongestion. The particular characteristics of the spray enable it to be delivered without substantial penetration of the nostrils and yet for it effectively to reach the target area.



FOR THE PURPOSES OF INFORMATION ONLY

Codes used to identify States party to the PCT on the front pages of pamphlets publishing international applications under the PCT.

AL	Albania	ES	Spain	LS	Lesotho	SI	Slovenia
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EE	Estonia	LR	Liberia	SG	Singapore		

INTERNATIONAL SEARCH REPORT

International Application No

PCT/IB 99/00469

A. CLASSIFICATION OF SUBJECT MATTER

IPC 6 A61M15/08 B05B5/00

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

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- "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- "&" document member of the same patent family

Date of the actual completion of the international search

3 June 1999

Date of mailing of the international search report

15/06/1999

Name and mailing address of the ISA

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Fax: (+31-70) 340-3016

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Jameson, P

INTERNATIONAL SEARCH REPORT

International Application No

PCT/IB 99/00469

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	<p>FR 1 146 256 A (MME PAULAIS) 8 November 1957 see the whole document -----</p>	1

INTERNATIONAL SEARCH REPORT

International application No

PCT/IB 99/00469

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			US 5490633 A	13-02-1996
			US 5292067 A	08-03-1994
			ZA 9202475 A	15-04-1993
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			BR 9509252 A	21-10-1997
			CA 2200181 A	11-04-1996
			CA 2222519 A	19-12-1996
			CN 1159773 A	17-09-1997
			CN 1192168 A	02-09-1998
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			EP 0776253 A	04-06-1997
			EP 0837736 A	29-04-1998
			WO 9610459 A	11-04-1996
			HU 76948 A	28-01-1998
			JP 10506324 T	23-06-1998
			PL 319482 A	04-08-1997
			SK 42197 A	10-09-1997
			ZA 9604689 A	09-12-1996
US 1599111	A	07-09-1926	NONE	
FR 1146256	A	08-11-1957	NONE	

REC'D 06 JUN 2000

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INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference CM1737/NJ	See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416) FOR FURTHER ACTION	
International application No. PCT/IB99/00469	International filing date (day/month/year) 22/03/1999	Priority date (day/month/year) 31/03/1998
International Patent Classification (IPC) or national classification and IPC A61M15/08		
Applicant THE PROCTER & GAMBLE COMPANY et al.		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.



2. This REPORT consists of a total of 7 sheets, including this cover sheet.

☐ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☒ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☒ Certain defects in the international application
- VIII ☒ Certain observations on the international application

Date of submission of the demand 27/09/1999	Date of completion of this report 31.05.2000
Name and mailing address of the international preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized officer Ceccarelli, D Telephone No. +49 89 2399 2653 

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No. PCT/IB99/00469

I. Basis of the report

1. This report has been drawn on the basis of (*substitute sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to the report since they do not contain amendments.*):

Description, pages:

1-15 as originally filed

Claims, No.:

1-10 as originally filed

Drawings, sheets:

1/3-3/3 as originally filed

2. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
- ☐ the claims, Nos.:
- ☐ the drawings, sheets:

3. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)):

4. Additional observations, if necessary:

III. Non-establishment of opinion with regard to novelty, inventive step and industrial applicability

The questions whether the claimed invention appears to be novel, to involve an inventive step (to be non-obvious), or to be industrially applicable have not been examined in respect of:

- ☐ the entire international application.
- ☒ claims Nos. 7-10.

because:

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No. PCT/IB99/00469

- ☒ the said international application, or the said claims Nos. 7-10 relate to the following subject matter which does not require an international preliminary examination (*specify*):

see separate sheet

- ☐ the description, claims or drawings (*indicate particular elements below*) or said claims Nos. are so unclear that no meaningful opinion could be formed (*specify*):

- ☐ the claims, or said claims Nos. are so inadequately supported by the description that no meaningful opinion could be formed.

- ☒ no international search report has been established for the said claims Nos. 7-10.

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims 1-6
	No: Claims
Inventive step (IS)	Yes: Claims
	No: Claims 1-6
Industrial applicability (IA)	Yes: Claims 1-6
	No: Claims

2. Citations and explanations

see separate sheet

VII. Certain defects in the international application

The following defects in the form or contents of the international application have been noted:

see separate sheet

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. PCT/IB99/00469

VIII. Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

see separate sheet

Re Item III

Non-establishment of opinion with regard to novelty, inventive step and industrial applicability

No examination according to Article 33(1) PCT will be carried out for claims 7-10, as they define methods for treating the human or animal body (Rule 67.1(iv) PCT). Moreover no examination will anyway be carried out for said claims 7-10, since no Search Report has been established for them (Rule 66.1(e) PCT).

Re Item V

Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Claim 1 is objected to under Article 33(3) PCT - requirements for inventive step for the following reasons.

Document GB-A-2 273 673, herein referred to as D1, discloses a spray device suitable for spraying a body cavity (page 6, lines 10-13), the device comprising a spray generator (items 8 and 9 in figure 2) a fluid reservoir (item 4 in figure 2) and a nosepiece (item 10 in figure 1). The reservoir contains a pharmaceutically acceptable fluid comprising a pharmaceutically acceptable treatment agent selected from medicaments, flavours, salts, surfactants and mixtures thereof (see page 7, line 4 - page 8, line 31). The device is adapted to produce a spray having a fluid ligament extending from the nosepiece, the ligament having a nosepiece end and a delivery end, the spray further comprising a spray cone diverging from the delivery end of the ligament (page 15, lines 10-15). Note that the term "nosepiece" in claim 1 is not considered to imply any suitability for application to a nostril. In particular, in this case it is assumed to mean a protrusion of the housing of the device.

The subject matter of claim 1 from what already disclosed by document D1 in that the ligament has a length of from 1 to 20 mm from the nosepiece end to the delivery end.

Document D1 is silent regarding the dimensions of the spray ligament and the skilled person would be forced to experiment in order to find the form of the spray which is most effective in practice. It is therefore considered obvious to arrive at the differentiating feature on the basis of trial and error testing.

2. Claims 2-6 do also not meet the requirements for inventive step, according to Article 33(3) PCT.

As a matter of fact the additional technical features of claims 2 and 3 are also present in document D1: see page 1, lines 8-12 where a electrostatic spray device is disclosed, wherein a voltage in the range from 1 kV up to 10 kV is applied to the fluid.

The additional features of claims 4 and 5, regarding the dimensions of the spray cone and the fluid doses to be delivered, appear obvious for the same reasoning as in paragraph 1 above.

The subject matter of claim 6 is already known (implicitly) from document D1 as the result of the combination of features of the reservoir and the dosage control (see page 10, line 26 - page 11, line 6).

Re Item VII

Certain defects in the international application

1. Document D1 should be cited in the description, since it represents the state of the art in the field of the application (Rule 5.1(a)(ii) PCT).
2. The claims are not drafted in the two-part form, which seems to be appropriate in this case to point out what is already known from the closest prior art (Rule 6.3(b) PCT).
3. The claims do not contain any reference signs to the figures, which would be appropriate to facilitate the understanding of the claims themselves (Rule 6.2(b) PCT).

Re Item VIII

Certain observations on the international application

1. Claim 1 defines the spray device as "packaged". It appears that this is intended to mean that the components of the device are included in a housing, although it may be understood that the device should be provided in a package. Therefore a lack of clarity is a result (Article 6 PCT).
2. Some statements in the description are inconsistent with the claims (Article 6 PCT) and may, when the description is used to interpret the claims, cast doubt on the scope of protection. See page 8, lines 6-7, page 13, line 20 and page 14, line 29.
3. In the description the applicant mentions other documents and then states that they should be incorporated by reference in the present application (see line 18 on page 4 and lines 13-14 on page 6).
This does not meet the requirements of Article 5 PCT, in that the description should be self contained in order to be sufficiently clear for the person skilled in the art (see also PCT Guidelines II-4.17).